



PATENT APPLICATION

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of

Docket No: Q77475

Hajime HARASHIMA, et al.

Appln. No.: 10/664,890

Group Art Unit: 2189

Confirmation No.: 4268

Examiner: Behzad Peikari

Filed: September 22, 2003

For: DATA WRITING/APPARATUS, DATA WRITING/READING APPARATUS, DATA WRITING METHOD AND DATA WRITING/READING METHOD

INFORMATION DISCLOSURE STATEMENT
UNDER 37 C.F.R. §§ 1.97 and 1.98

MAIL STOP AMENDMENT

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

In accordance with the duty of disclosure under 37 C.F.R. § 1.56, Applicant hereby notifies the U.S. Patent and Trademark Office of the documents which are listed on the attached PTO/SB/08 A & B (modified) form and/or listed herein and which the Examiner may deem material to patentability of the claims of the above-identified application.

1. Japanese Patent Application Publication No. 2002-123372, published April 26, 2002.
2. Japanese Patent Application Publication No. 7-160436, published June 23, 1995.
3. Japanese Patent Application Publication No. 5-189314, published July 30, 1993.

One copy of each of the listed documents is submitted herewith.

The present Information Disclosure Statement is being filed after the later of three months from the application's filing date and the mailing date of the first Office Action on the merits, but before a Final Office Action, Notice of Allowance, or an action that otherwise closes

INFORMATION DISCLOSURE STATEMENT

U.S. Appln. No.: 10/664,890

Attorney Docket: Q77475

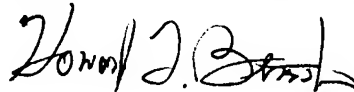
prosecution in the application (whichever is earlier), and therefore Applicant is filing concurrently herewith a Statement Under 37 C.F.R. § 1.97(e). No fee under 37 C.F.R. § 1.17(p) is required.

In compliance with the concise explanation requirement under 37 C.F.R. § 1.98(a)(3) for foreign language documents, Applicant encloses herewith a copy of a corresponding Japanese Office Action dated September 12, 2006, and an English translation of the pertinent portions thereof which cites such documents and indicates the degree of relevance found by the foreign office.

The submission of the listed documents is not intended as an admission that any such document constitutes prior art against the claims of the present application. Applicant does not waive any right to take any action that would be appropriate to antedate or otherwise remove any listed document as a competent reference against the claims of the present application.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,



Howard L. Bernstein
Registration No. 25,665

SUGHRUE MION, PLLC
Telephone: (202) 293-7060
Facsimile: (202) 293-7860

WASHINGTON OFFICE

23373

CUSTOMER NUMBER

Date: October 30, 2006

Substitute for Form 1449 A & B/PTO

Complete if Known

Application Number	10/664,890
Confirmation Number	4268
Filing Date	September 22, 2003
First Named Inventor	Hajime HARASHIMA
Art Unit	2189
Examiner Name	Behzad Peikari
Attorney Docket Number	Q77475

**INFORMATION DISCLOSURE
STATEMENT BY APPLICANT**

Use as many sheets as necessary)

Sheet 1 of 1

U.S. PATENT DOCUMENTS

Examiner Initials*	Cite No. ¹	Document Number		Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document
		Number	Kind Code ² (if known)		
		US			
		US			
		US			
		US			
		US			
		US			
		US			
		US			
		US			
		US			

FOREIGN PATENT DOCUMENTS

Examiner Initials*	Cite No. ¹	Foreign Patent Document			Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Translation ⁶
		Country Code ³	Number ⁴	Kind Code ⁵ (if known)			
		JP	2002-123372	A	04-26-2002		
		JP	7-160436	A	06-23-1995		
		JP	5-189314	A	07-30-1993		

NON PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city, and/or country where published.	Translation ⁶

Examiner Signature

Date Considered

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹Applicant's unique citation designation number (optional). ²See Kind Codes of USPTO Patent Documents at www.uspto.gov, MPEP 901.04 or follow the hyperlink from the title of the document to the intranet. ³Enter Office that issued the document, by the two-letter code (WIPO Standard ST. 3). ⁴For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁵Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. ⁶Applicant is to indicate here if English language Translation is attached.



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STATEMENT UNDER 37 C.F.R. § 1.97(e)

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

The undersigned hereby states, upon information and belief:

That each item of information contained in the Information Disclosure Statement filed concurrently herewith was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of said Information Disclosure Statement.

Respectfully submitted,

SUGHRUE MION, PLLC
Telephone: (202) 293-7060
Facsimile: (202) 293-7860

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c) Regarding claims 1 through 21

Claim 1 of the present application uses the term “redundancy break.” “Redundancy break” appears generally to indicate a state where there is no redundancy, i.e. a degenerate state.

If this is the case, then the inventions relating to claims 1 through 21 of the present application (hereinafter referred to as “present inventions”) appear to be characterized by an arrangement whereby, in a degenerate state, data which is the object of a write command is written to a second storage means.

Paragraphs (0027) through (0031), etc. of cited literature 1 describe how when the operation of any of the disk devices making up a RAID is detected to be faulty, the faulty disk device and block address are registered, and upon receiving a write command to that block address from the host computer, the data is written only to the cache memory of the control unit, and is restored from said cache memory after said faulty disk has recovered.

Furthermore, paragraph (0032) of cited literature 1 describes how, in processing a read command, if the target data is present in cache memory, the data from the cache memory is forwarded to the host computer.

The “disk device” and “cache memory” in the invention described in cited literature 1 (hereinafter referred to as “cited invention 1”) correspond respectively to the “first storage means” and “second storage means” in the present invention.

The present invention is configured to report write completion to the higher level device by writing to the second storage device, which differs from cited invention 1 in that the latter does not have such a configuration.

However, reporting write completion to a higher level device by writing to the memory of a control unit is well known art in this technical field, as described in paragraph (0005) of cited literature 2, etc.

Using a nonvolatile storage means as a temporary storage area for write data, as indicated in Figure 1 of cited literature 2, etc. and using a storage means with a power supply as a temporary storage area for write data, as indicated in Figure 1 of cited literature 3, etc. is well known art in this technical field.

Therefore, employing a nonvolatile storage means or a storage means with a power supply instead of the cache memory in cited invention 1 is a matter which could be suitably accomplished by a person skilled in the art.

Based on the above, the present invention could have been easily invented by a person skilled in the art on the basis of cited literature 1 and the aforementioned well-known art.

List of cited literature

1. Japanese Unexamined Patent Application Publication 2002-123372
2. Japanese Unexamined Patent Application Publication H07-160436
3. Japanese Unexamined Patent Application Publication H05-189314